RESERVE COPY.

# PATENT SPECIFICATION

Application Date: Jan. 19, 1918. No. 1117/18.

**191,757**

Accepted, March 5, 1918 (but withheld from Publication under Section 30 of Patents and Designs Acts, 1907 and 1919).

Authorised to be Published: Dec. 13, 1922. Date of Publication: Feb. 15, 1923.

## COMPLETE SPECIFICATION.

## Improvements in Apparatus for Electrical or Radiographic Transmission of Photographs.

I, ARCHIBALD MONTGOMERY LOW, Captain in His Majesty's Army, of Royal Flying Corps Experimental Works, Feltham, in the County of Middlesex, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to the electrical or radiographic transmission of photographs by obtaining variable electric currents corresponding to the gradations of light and shade in the picture and utilising such currents to affect a receiving apparatus such that a corresponding picture will be obtained thereon.

The object of the present invention is to provide an improved method of the above character for the electrical or radiographic transmission of photographs and the invention consists in a method of electrically or radiographically transmitting photographs or other pictures which consists in reproducing the picture by a suitable process upon a movable conducting surface so that the lights and shades are represented by portions of surface of varying conductivity, causing a current to pass through a conductor contacting with and movable relatively to said moving surface, and employing such current to affect a synchronously moving surface of a material, the colour of which is affected by the passage therethrough of an electric current.

The invention also consists in the apparatus hereinafter described for carrying out the above method.

The accompanying drawings illustrate a portion of one convenient form of apparatus that may be employed in accordance with the invention:—

Figure 1 is a side elevation; and

Figure 2 is a plan.

In carrying my invention into effect in one convenient manner I form what may be termed the sending apparatus from a drum *a* of copper or other electrical conducting material, and upon this drum I reproduce a photograph by the usual carbon or other deposition process so that the lights and shades of the photograph will be represented by portions of surface of varying conductivity.

A brush *b* is adapted to maintain continuous contact with a conducting part of the drum and the picture thereon is traversed by a contact point *c* which is movable relatively to the drum by any suitable means as, for example, by means of a fine pitched screw *d* engaging the threaded carrier for the contact point *c* and adapted to be rotated from the drum by means of a chain *e* or other suitable transmission gear, the ratio of which may be suitably proportioned for any particular requirements.

At the distant or other station at which the photograph is to be reproduced I provide an exactly similar form of apparatus comprising a moving drum with brush and contact point, but this receiving drum I cover with a surface of a character such that its colour will be affected by the passage of current therethrough, as, for example, I may wrap round the drum a paper, the surface of which is covered by an iodine and starch mixture which is adapted to turn blue at the part through which an electric current passes.

The drums are caused to rotate synchronously by means of synchronised motors or other convenient devices, and they may be connected directly by means of an electric conductor or they may be in wireless communication with one another, the arrangement being such in either case that, owing to the varying conductivity of the sending drum, currents of varying intensity will be passed through the receiving surface and in consequence the colour of the same will be graduated in a manner corresponding to the lights and shades of the picture that is to be transmitted, so that a more or less perfect reproduction of such picture will be obtained at the receiving end.

It is obvious that the invention is capable of wide application, as it is possible by its means to reproduce lines if the speed of rotation of the drums is suitably adjusted having regard to the persistence of vision.

It will be obvious that the invention is not to be confined to the foregoing details of construction as in place of using drums I may employ any other movable surfaces, and I may vary the means adopted for causing the pointer to traverse every part of the picture, and the receiving apparatus I may so arrange as to be operated after the manner of an ordinary syphon recorder instead of using a surface, the colour of which is varied as above described.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A method of electrically or radiographically transmitting photographs or other pictures, which consists in reproducing the picture by a suitable process upon a movable conducting surface so that the lights and shades are represented by portions of surface of varying conductivity, causing a current to pass through a conductor contacting with and movable relatively to said moving surface and employing such current to affect a synchronously moving surface of a material, the colour of which is affected by the passage therethrough of an electric current, substantially as described.

2. Apparatus for carrying out the method according to Claim 1, comprising two synchronously moving surfaces connected directly or by wireless with one another, one of said surfaces having the picture reproduced thereon by carbon or other deposition process, while the other is formed from a mixture of iodine and starch or other substance, the colour of which will be affected by the passage of an electric current therethrough, substantially as described.

Dated this 28th day of December, 1917.

MARKS & CLERK.

---

Redhill: Printed for His Majesty's Stationery Office, by Love & Malcomson, Ltd.—1923.

[This Drawing is a reproduction of the Original on a reduced scale]

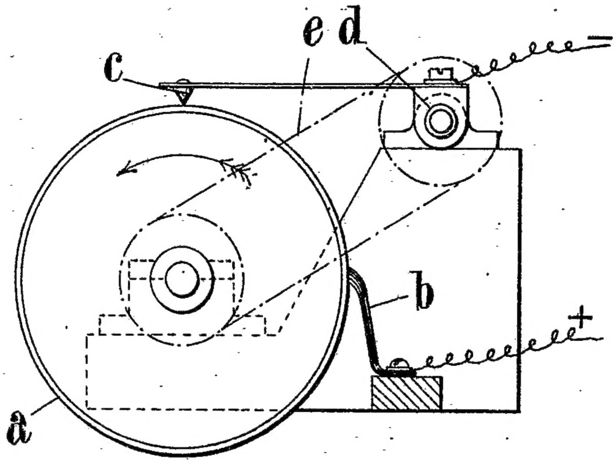

Fig. 1.

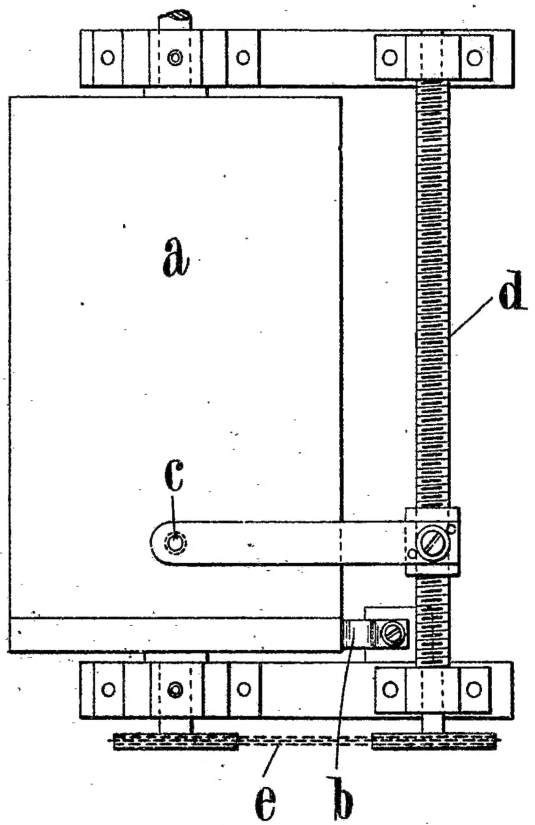

Fig. 2.

Malby&Sons, Photo-Litho.